

What is claimed is:

1 1. A method for quadrature-bias compensation in a
2 Coriolis gyro, whose resonator (1) is in the form of a
3 coupled system comprising a first and a second linear
4 oscillator (3, 4), having the following steps:
5 - determination of the quadrature bias of the Coriolis
6 gyro,
7 - production of an electrostatic field in order to vary
8 the mutual alignment of the two oscillators (3, 4) with
9 respect to one another, with the alignment/strength of the
10 electrostatic field being regulated such that the
11 determined quadrature bias is as small as possible.

1 2. The method as claimed in claim 1, **characterized** in
2 that the electrostatic field results in a change in the
3 alignment of first spring elements (5_1 to 5_4), which
4 connect the first oscillator (3) to a gyro frame (7_3 , 7_4)
5 of the Coriolis gyro, and/or a change in the alignment of
6 second spring elements (6_1 , 6_2), which couple the first
7 oscillator (3) to the second oscillator (4).

1 3. The method as claimed in claim 2, **characterized** in
2 that the alignment of the first spring elements (5_1 to 5_4)
3 is varied by varying the position/alignment of the first
4 oscillator (3) by means of the electrostatic field, and in
5 that the alignment of the second spring elements (6_1 , 6_2)
6 is varied by varying the position/alignment of the second
7 oscillator (4) by means of the electrostatic field.

1 4. The method as claimed in claim 2 or 3, **characterized**
2 in that the electrical field results in the alignments of
3 the first and second spring elements (6_1 , 6_2 , 5_1 to 5_4)
4 being made orthogonal with respect to one another.

1 5. The method as claimed in one of claims 2 to 4,
2 **characterized** in that the second oscillator (4) is
3 attached to/clamped in on the first oscillator (3) at one
4 end by means of the second spring elements (6_1 , 6_2),
5 and/or the first oscillator (3) is attached to/clamped in
6 on a gyro frame of the Coriolis gyro at one end by means
7 of the first spring elements (5_1 to 5_4),

1 6. A Coriolis gyro, whose resonator (1) is in the form
2 of a coupled system comprising a first and a second linear
3 oscillator (3, 4),

4 **characterized by**

5 - a device for production of an electrostatic field
6 (11₁', 11₂', 10₁ to 10₄) by means of which the alignment of
7 the two oscillators (3, 4) with respect to one another can
8 be varied,

9 - a device (45, 47) for determination of any quadrature
10 bias of the Coriolis gyro, and

11 - a control loop (55, 56, 57), by means of which the
12 strength of the electrostatic field is regulated as a
13 function of the determined quadrature bias such that the
14 determined quadrature bias is as small as possible.

1 7. The Coriolis gyro as claimed in claim 6,

2 **characterized** in that the first oscillator (3) is
3 connected by means of first spring elements (5₁ to 5₄) to
4 a gyro frame (7₁, 7₂) of the Coriolis gyro, and the second
5 oscillator (4) is connected by means of second spring
6 elements (6₁, 6₂) to the first oscillator (3).

1 8. The Coriolis gyro as claimed in claim 7,
2 **characterized** in that the first and second spring elements
3 are arranged/designed such that the alignment angle of the
4 first spring elements (5_1 to 5_4) with respect to the gyro
5 frame (7_3 , 7_4) can be varied by means of the electrostatic
6 field, and/or in that the alignment angle of the second
7 spring elements (6_1 , 6_2) with respect to the first
8 oscillator (3) can be varied by means of the electrostatic
9 field.

1 9. The Coriolis gyro as claimed in claim 7 or 8,
2 **characterized** in that the second oscillator (4) is
3 attached to/clamped in on the first oscillator (3) at one
4 end by means of the second spring elements (6_1 , 6_2),
5 and/or the first oscillator (3) is attached to/clamped in
6 on a gyro frame of the Coriolis gyro at one end by means
7 of the first spring elements (5_1 to 5_4).

1 10. The Coriolis gyro as claimed in one of claims 7 to 9,
2 **characterized** in that all of the second spring elements
3 (6_1 to 6_2) which connect the second oscillator (4) to the
4 first oscillator (3) are designed such that force is
5 introduced from the first oscillator (3) to the second
6 oscillator (4) essentially from one side of the first
7 oscillator (3).

1 11. The Coriolis gyro as claimed in one of claims 7 to
2 10, **characterized** in that all of the first spring elements
3 (5_1 to 5_4) which connect the first oscillator (3) to the
4 gyro frame (7_3 , 7_4) of the Coriolis gyro are arranged
5 parallel and on the same plane as one another, with the
6 start and end points of the first spring elements (5_1 to
7 5_4) each being located on a common axis.

1 12. A Coriolis gyro (1'), having a first and a second
2 resonator (70_1 , 70_2), which are each in the form of a
3 coupled system comprising a first and a second linear
4 oscillator (3_1 , 3_2 , 4_1 , 4_2), with the first resonator (70_1)
5 being mechanically/electrostatically connected/coupled to
6 the second resonator (70_2) such that the two resonators
7 can be caused to oscillate in antiphase with respect to
8 one another along a common oscillation axis (72).

1 **13.** The Coriolis gyro (1') as claimed in claim 12,

2 **characterized by:**

3 - a device for production of electrostatic fields (11₁,
4 11₂, 10₁ to 10₄, and 11₃, 11₄, 10₅ to 10₈), by means of
5 which the alignment of the linear oscillators (3₁, 3₂, 4₁,
6 4₂) with respect to one another can be varied,

7 - a device for determination of the quadrature bias of
8 the Coriolis gyro (1'), and

9 - control loops (64), by means of which the strengths
10 of the electrostatic fields are regulated such that the
11 determined quadrature bias is as small as possible.

1 **14.** The Coriolis gyro (1') as claimed in claim 12 or 13,

2 **characterized** in that the configurations of the first and
3 of the second resonator (70₁, 70₂) are identical, with the
4 resonators (70₁, 70₂) being arranged axially symmetrically
5 with respect to one another, with respect to an axis of
6 symmetry (73) which is at right angles to the common
7 oscillation axis (72).

1 **15.** The Coriolis gyro (1') as claimed in one of claims 12

2 to 14, **characterized** in that the first oscillators (3₁,
3 3₂) are each connected by means of first spring elements
4 (5₁ - 5₈) to a gyro frame (7₁ - 7₁₄) of the Coriolis gyro,
5 and the second oscillators (4₁, 4₂) are each connected by
6 means of second spring elements (6₁ - 6₄) to one of the
7 first oscillators (3₁, 3₂).